ORDER NO. AD-7303-070

Service Manual

Technics
HI-FI COMPONENTS
Technics

Stereo Integrated Amplifier

MODEL SU-3500

TECHNICAL SPECIFICATION (IHF)

MAIN AMPLIFIER SECTION

Music Power:		190W (4Ω) 125W (8Ω)
1kHz continuous power:		
	each channel driven	65W/65W (4Ω)
		50W/50W (8Ω)
	both channels driven	55W+55W (4Ω)
		43W + 43W (8Ω)
20Hz~20kHz continuous power:		
	both channels driven	47W +47W (4Ω)
		41W +41W (8Ω)
Total harmonic distortion:		0.08%
Intermodulation distortion:		0.08%
Power bandwidth:		
(both channels driven at 8Ω)	5Hz ~ 70kHz	−3dB
Frequency responce:	5Hz~200kHz	+0dB, −3dB
Residual hum and noise:		0.5mV
S/N:		110dB
Damping factor:		50 (4Ω), 100 (8Ω)
Input sensitivity and impedance:		1V/50kΩ
Load impedance:	MAIN or REMOTE	4~16Ω
	MAIN + REMOTE	8~16Ω

PRE AMPLIFIER SECTION

Input sensitivity and impedance:	PHONO 1, 2	2mV/25kΩ, 50kΩ, 100kΩ
	TUNER, AUX 1, 2	100mV/50kΩ
	TAPE DECK 1, 2 (PLAYBACK)	100mV/50kΩ
	TAPE DECK 1, REC/PLAY (Input)	100mV/50kΩ
PHONO 1, 2 maximum input voltage:		510mV
Total harmonic distortion:		0.05%
S/N:	PHONO 1, 2	70dB
	TUNER, AUX 1, 2	90dB
Frequency response:		
	PHONO 1, 2	RIAA standard curve ±0.5dB
	TUNER, AUX 1, 2	5Hz~100kHz +0dB, −3dB
Tone control:	BASS	50Hz +12dB~−12dB
	TREBLE	20kHz +12dB~−12dB
Filter:	LOW	30Hz −12dB/oct
	HIGH	8kHz −12dB/oct
Loudness control (volume at −30dB):		100Hz +8dB
Output voltage and impedance:	PRE OUT rated	1V/100Ω
	max.	11V/100Ω
	TAPE DECK 1, 2 (REC OUT)	100mV/500Ω
	TAPE DECK 1 REC/PLAY (output)	30mV/80kΩ

GENERAL

Power Supply:	50Hz/60Hz 110/120/220/240V
Power consumption:	380W
Dimensions (W×H×D):	16-1/8" ×5-1/2" ×13-3/8" (410×140×340) mm
Weight:	22.5 lbs. (10.2kg)

TECHNISCHE DATEN (DIN 45 500)

VERSTÄRKERTEIL

Musikleistung:			2×95W (4Ω), 2×62.5W (8Ω)
RMS-Dauertonleistung bei 1kHz:			
beide Kanäle zusammen ausgesteuert			2×55W (4Ω)
			2×43W (8Ω)
20Hz~20kHz RMS-Dauertonleistung:			
beide Kanäle zusammen ausgesteuert			2×47W (4Ω)
			2×41W (8Ω)
Harmonische Verzerrungen:	Nennleistung bei 1kHz 4Ω		0.08%
	Nennleistung bei 40Hz~16000Hz 4Ω		0.08%
Intermodulationsverzerrung:			
Nennleistung bei 250Hz : 8000Hz = 4 : 1 4Ω			0.08%
Leistungsbandbreite:			
(beide Kanäle zusammen ausgesteuert bei 4Ω)		5Hz~70kHz	−3dB
Frequenzgang:		5Hz~100kHz	+0dB −3dB
Fremdspannungsabstand:	Nennleistung	PHONO	60dB
		AUX	80dB
	50mV Ausgangsleistung	PHONO	53dB
		AUX	54dB
Dampfungsfaktor:			50 (4Ω), 100(8Ω)
Endimpedanz:	MAIN oder REMOTE		4~16Ω
	MAIN + REMOTE		8~16Ω

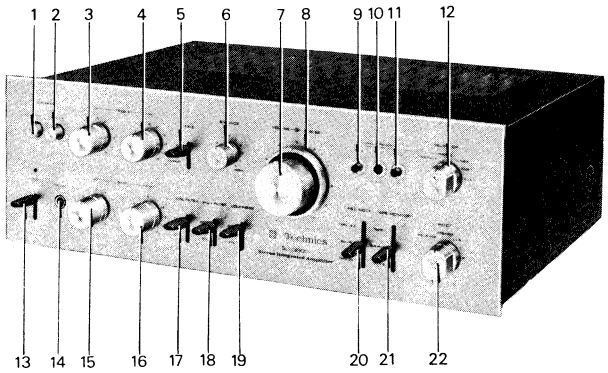
Eingangsempfindlichkeit & Impedanz:	MAIN IN		1V/50kΩ
	PHONO 1, 2	2mV/25kΩ, 50kΩ, 100kΩ	
	TUNER, AUX 1, 2		100mV/50kΩ
	TAPE DECK 1, 2 (PLAYBACK)		100mV/50kΩ
	TAPE DECK 1 REC/PLAY (Wiedergabe)		100mV/50kΩ
PHONO 1, 2 Maximal Eingangspannungen:			510mV
Klangregler:	Bässe	50Hz, +12dB~−12dB	
	Höhen	20kHz, +12dB~−12dB	
Filter:	Rumpel	30Hz, −12dB/oct	
	Rausch	8kHz, −12dB/oct	
Gehörrichtige Lautstärkekontur: (Lautstärke −30dB)			100Hz, +8dB
Ausgangsspannungen & Impedanz:	PRE OUT	Nenn	1V/100Ω
		Maximal	11V/100Ω
	TAPE DECK 1, 2 (REC OUT)		100mV/500Ω
	TAPE DECK 1 REC/PLAY (Aufnahme)		30mV/80kΩ

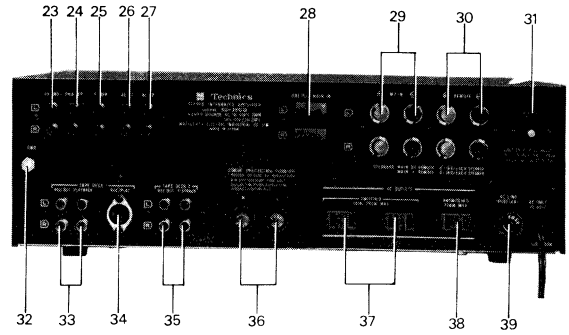
ALLGEMEINE DATEN

Netzspannung Umschaltbar:	50Hz 60Hz 110/120/220/240V
Leistungsaufnahme:	380W
Abmessungen (B×H×T):	410×140×340mm
Gewicht:	10.2kg

MATSUSHITA ELECTRIC
MATSUSHITA ELECTRIC TRADING CO., LTD.
P. O. Box 288, Central Osaka, Japan

■ LOCATION OF CONTROLS





1. MAIN SPEAKER SWITCH [S10]
2. REMOTE SPEAKER SWITCH [S11]
3. LEFT TREBLE CONTROL
4. RIGHT TREBLE CONTROL
5. TONE SWITCH [S6]
6. BALANCE CONTROL
7. VOLUME CONTROL
8. PRE-SET
9. PHONO IMPEDANCE 25kΩ SWITCH [S2-1]
10. PHONO IMPEDANCE 50kΩ SWITCH [S2-2]
11. PHONO IMPEDANCE 100kΩ SWITCH [S2-3]
12. SELECTOR SWITCH [S1]
13. POWER SOURCE SWITCH [S12]
14. HEADPHONES JACK
15. LEFT BASS CONTROL
16. RIGHT BASS CONTROL
17. LOW FILTER SWITCH [S8]
18. HIGH FILTER SWITCH [S9]
19. LOUDNESS SWITCH [S7]
20. RECORDING MODE SWITCH [S4]
21. TAPE MONITOR SWITCH [S3]
22. MODE SWITCH [S5]

23. PHONO 1 INPUT TERMINALS
24. PHONO 2 INPUT TERMINALS
25. TUNER INPUT TERMINALS
26. AUX 1 INPUT TERMINALS
27. AUX 2 INPUT TERMINALS
28. PRE AMP AND MAIN AMP CONNECTION TERMINALS
29. MAIN SPEAKER TERMINALS
30. REMOTE SPEAKER TERMINALS
31. VOLTAGE SELECTOR SWITCH [S13]
32. GROUND TERMINAL
33. TAPE DECK 1 CONNECTION TERMINALS
34. TAPE DECK 1 CONNECTION DIN SOCKET
35. TAPE DECK 2 CONNECTION TERMINALS
36. CIRCUIT PROTECTION FUSES
37. AC OUTLETS ..... Switched
38. AC OUTLET ..... Unswitched
39. AC LINE FUSE

■ TO REMOVE CABINET AND BOTTOM BOARD

1. Remove six (6) cabinet mounting screws, nos. ① ~ ④, as illustrated in figure 1. (No. ③ and ④ screws are left and right side of cabinet.)
2. Remove cabinet from chassis.
3. Remove six (6) bottom board mounting red screws, nos. ⑤ ~ ⑩, as illustrated in figure 2.
4. Remove bottom board from chassis.

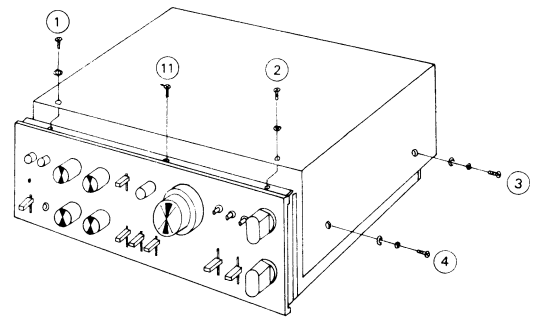


Fig. 1

■ TO REMOVE FRONT PANEL

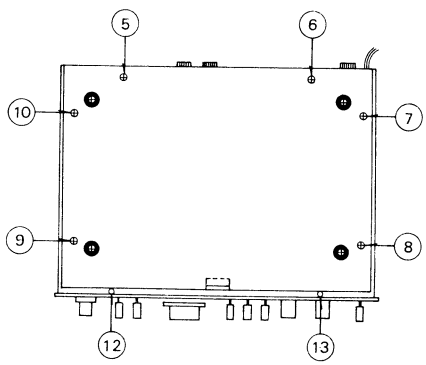


Fig. 2

1. Remove cabinet from chassis.
2. Remove control knobs from set. Refer to "Cabinet & Chassis Parts Location" on page 7.
3. Remove pre-set from set. Refer to "Cabinet & Chassis Parts Location" on page 7.
4. Remove three (3) panel mounting black screws, nos. ⑪ ~ ⑬ as illustrated in figure 1 and figure 2.
5. Remove front panel from chassis.

■ ALIGNMENT INSTRUCTIONS

Notes :

1. Volume control ..... Minimum
2. Maintain line voltage at rated voltage.
3. Before adjusting, Icq adjusting volumes (VR402, Left and Right channel) should be turned to the right side completely.
4. The Icq adjustment should be started about 5 minutes after setting the power switch to the ON position.

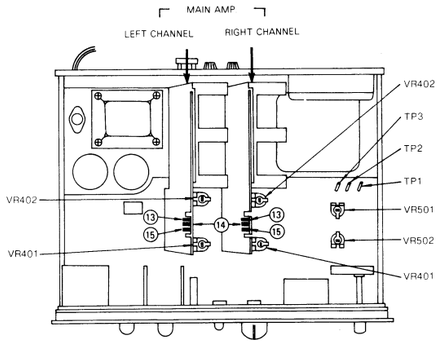
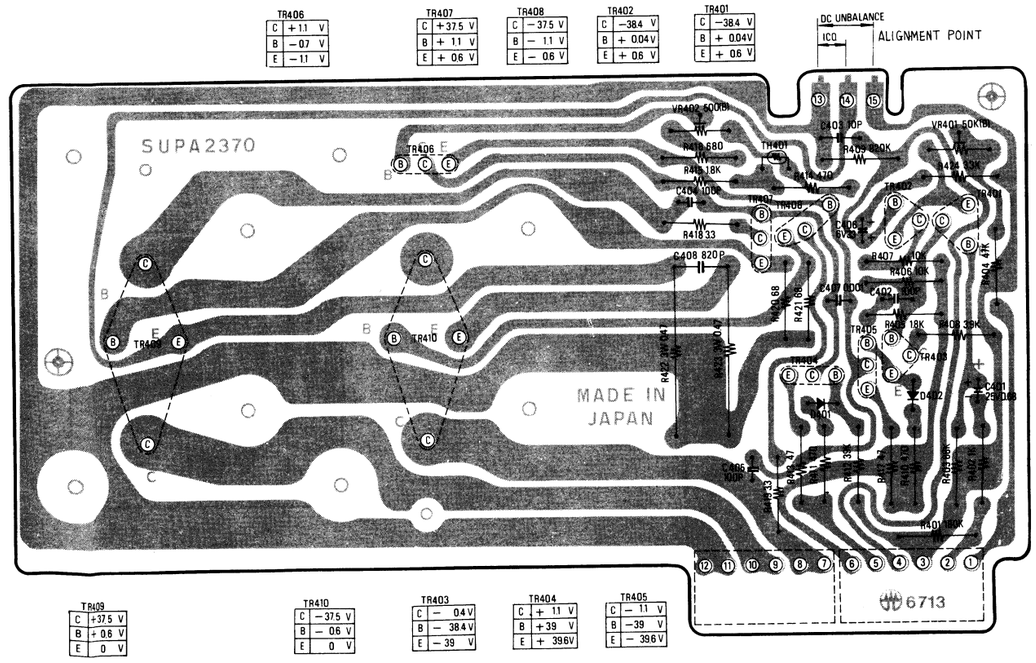


Fig. 3

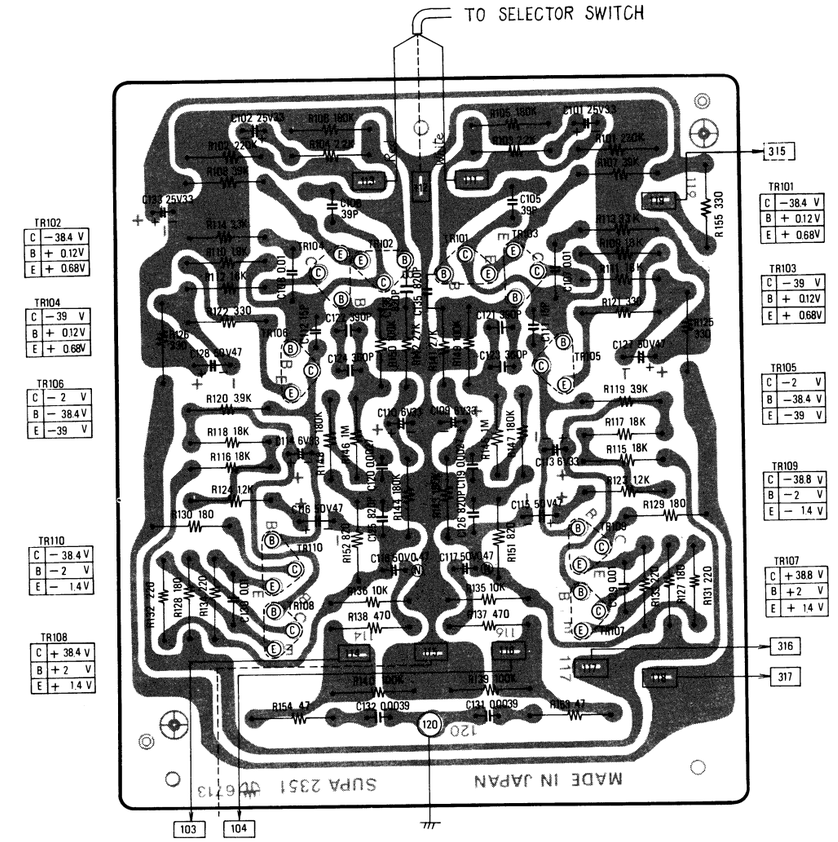
ALIGNMENT	DC VTVM CONNECTION	ADJUSTMENT POINTS	REMARKS
POSITIVE POWER VOLTAGE	Connect DC VTVM to test point **TP3.** Common to test point **TP1.**	VR501	Make sure that DC VTVM becomes positive (+)40V.
NEGATIVE POWER VOLTAGE	Connect DC VTVM to test point **TP1.** Common to test point **TP2.**	VR502	Make sure that DC VTVM becomes negative (−) 40V.
DC UNBALANCE	Connect DC VTVM to alignment point ⑬ and ⑮ terminals. Refer to figure 3.	VR401	Make sure that DC VTVM becomes zero (0)V. [Left and Right side]
Icq	Connect DC VTVM to alignment point ⑭ (positive side) and ⑬ (negative side) terminals. Refer to figure 3.	VR402	Make adjustment so that the indication on DC VTVM becomes 15mV. [Left and Right side]

MAIN AMPLIFIER Circuit

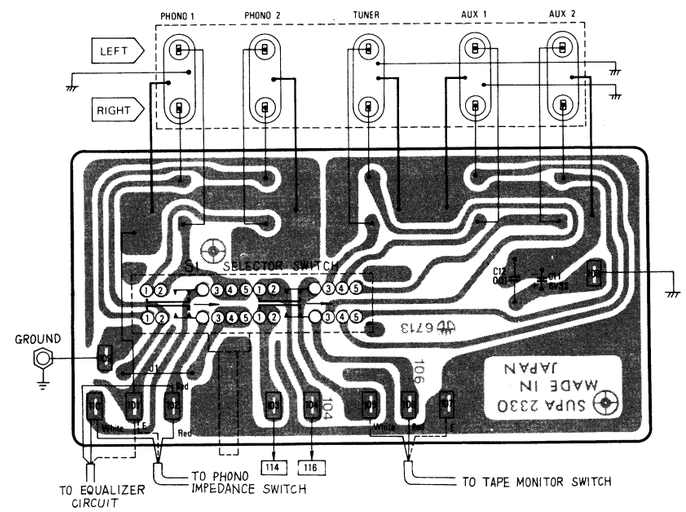
Left channel is same as Right channel


TR406 C +1.1 V B −0.7 V E −1.1 V
TR407 C +37.5 V B +1.1 V E +0.6 V
TR408 C −37.5 V B −1.1 V E −0.6 V
TR402 C −38.4 V B +0.04 V E +0.6 V
TR401 C −38.4 V B +0.04 V E +0.6 V
DC UNBALANCE
ICQ
ALIGNMENT POINT
SUPA2370
MADE IN JAPAN
6713
TR409 C +37.5 V B +0.6 V E 0 V
TR410 C −37.5 V B −0.6 V E 0 V
TR403 C −0.4 V B −38.4 V E −39 V
TR404 C +1.1 V B +39 V E +39.6 V
TR405 C −1.1 V B −39 V E −39.6 V

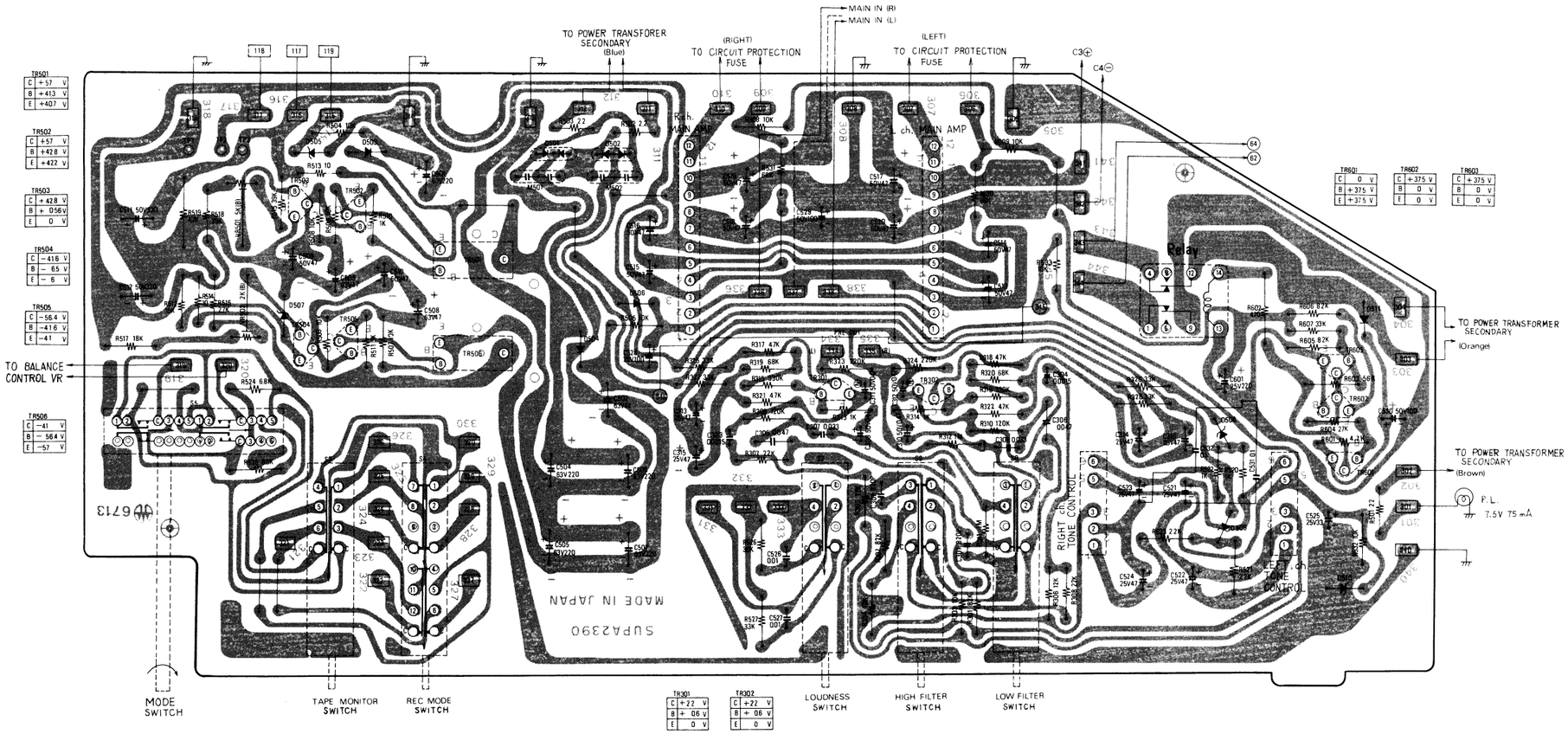
EQUALIZER Circuit Board



SELECTOR SWITCH Circuit Board

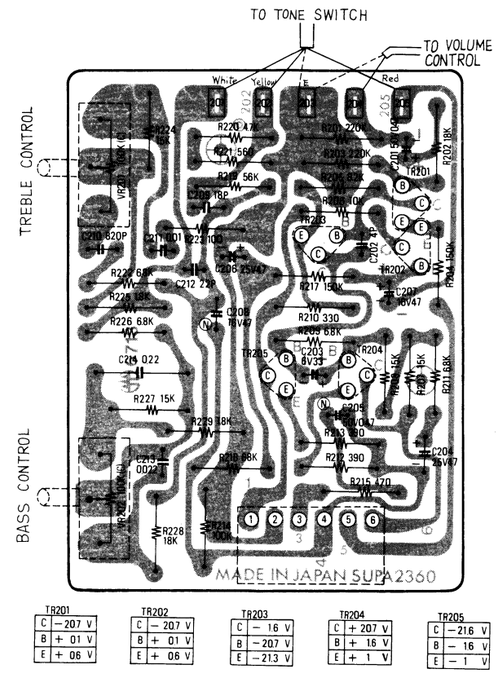


POWER SOURCE, SPEAKER PROTECTION, FILTER AMP, TAPE MONITOR SWITCH & MODE SWITCH Circuit Board

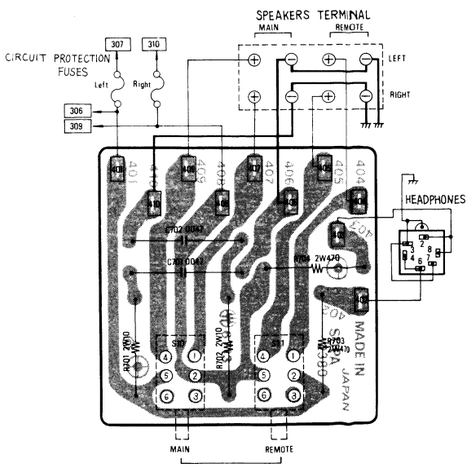

TO POWER TRANSFORER SECONDARY (Blue)
(RIGHT) TO CIRCUIT PROTECTION FUSE
(LEFT) TO CIRCUIT PROTECTION FUSE
MAIN IN (R)
MAIN IN (L)
TR501 C +57 V B +413 V E +407 V
TR502 C +57 V B +428 V E +422 V
TR503 C +428 V B +056 V E 0 V
TR504 C −416 V B − 65 V E − 6 V
TR505 C −56.4 V B −416 V E −41 V
TR506 C −41 V B −564 V E −57 V
TO BALANCE CONTROL VR
TR601 C 0 V B +375 V E +375 V
TR602 C +375 V B 0 V E 0 V
TR603 C +375 V B 0 V E 0 V
TO POWER TRANSFORMER SECONDARY (Orange)
TO POWER TRANSFORMER SECONDARY (Brown)
P.L. 7.5V 75 mA
Relay
RIGHT ch TONE CONTROL
LEFT ch TONE CONTROL
MADE IN JAPAN
SUPA2390
TR301 C +22 V B + 06 V E 0 V
TR302 C +22 V B + 06 V E 0 V
MODE SWITCH
TAPE MONITOR SWITCH
REC MODE SWITCH
LOUDNESS SWITCH
HIGH FILTER SWITCH
LOW FILTER SWITCH

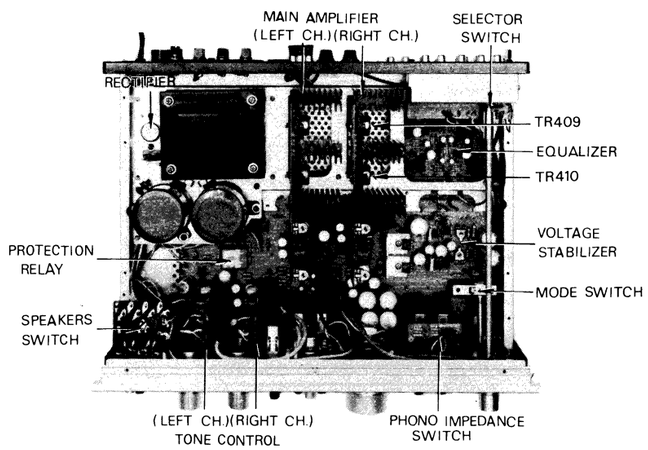
TONE CONTROL Circuit Board

Left channel is same as Right channel

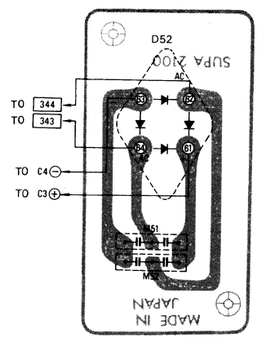

TO TONE SWITCH
TO VOLUME CONTROL
TREBLE CONTROL
BASS CONTROL
White
Yellow
Red
MADE IN JAPAN SUPA2360
TR201 C −207 V B + 01 V E + 06 V
TR202 C − 207 V B + 01 V E + 08 V
TR203 C − 16 V B −207 V E −213 V
TR204 C + 207 V B + 16 V E + 1 V
TR205 C −216 V B − 16 V E − 1 V

SPEAKERS SWITCH Circuit Board

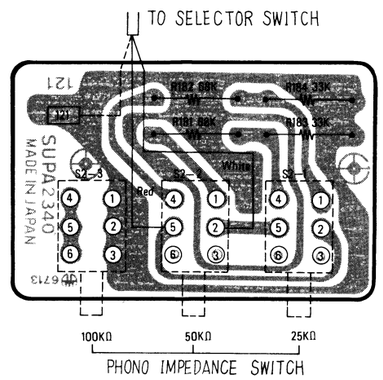




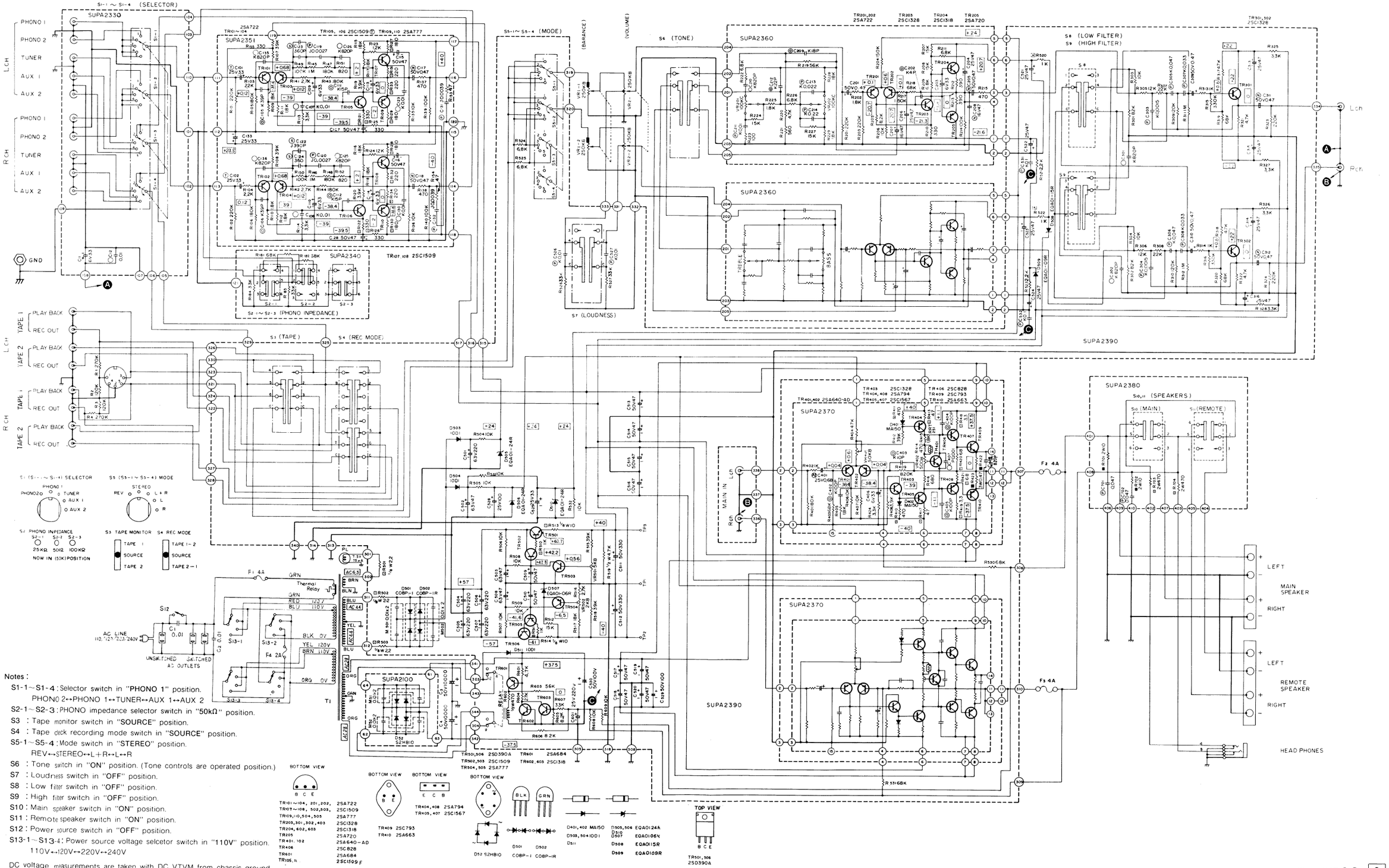
RECTIFIER



PHONO IMPEDANCE SWITCH Circuit Board



Schematic Diagram ..... Model SU-3500 (This schematic diagram may be modified at any time with the development of new technology.)



Notes :

- S1-1~S1-4 : Selector switch in "PHONO 1" position.
  PHONO 2↔PHONO 1↔TUNER↔AUX 1↔AUX 2
- S2-1~S2-3 : PHONO impedance selector switch in "50kΩ" position.
- S3 : Tape monitor switch in "SOURCE" position.
- S4 : Tape deck recording mode switch in "SOURCE" position.
- S5-1~S5-4 : Mode switch in "STEREO" position.
  REV↔STEREO↔L+R↔L↔R
- S6 : Tone switch in "ON" position. (Tone controls are operated position.)
- S7 : Loudness switch in "OFF" position.
- S8 : Low filter switch in "OFF" position.
- S9 : High filter switch in "OFF" position.
- S10 : Main speaker switch in "ON" position.
- S11 : Remote speaker switch in "ON" position.
- S12 : Power source switch in "OFF" position.
- S13-1~S13-4 : Power source voltage selcetor switch in "110V" position.
  110V↔120V↔220V↔240V

DC voltage measurements are taken with DC VTVM from chassis ground.

TR101~104, 201, 202, 2SA722
TR107~108, 502, 503, 2SC1509
TR109, 110, 504, 505 2SA777
TR203, 301, 302, 403 2SC1328
TR204, 402, 603 2SC1318
TR205 2SA720
TR401, 102 2SA640-AD
TR406 2SC828
TR601 2SA684
TR105, R 2SC1509 F

TR409 2SC793
TR410 2SA663

TR404, 408 2SA794
TR405, 407 2SC1567

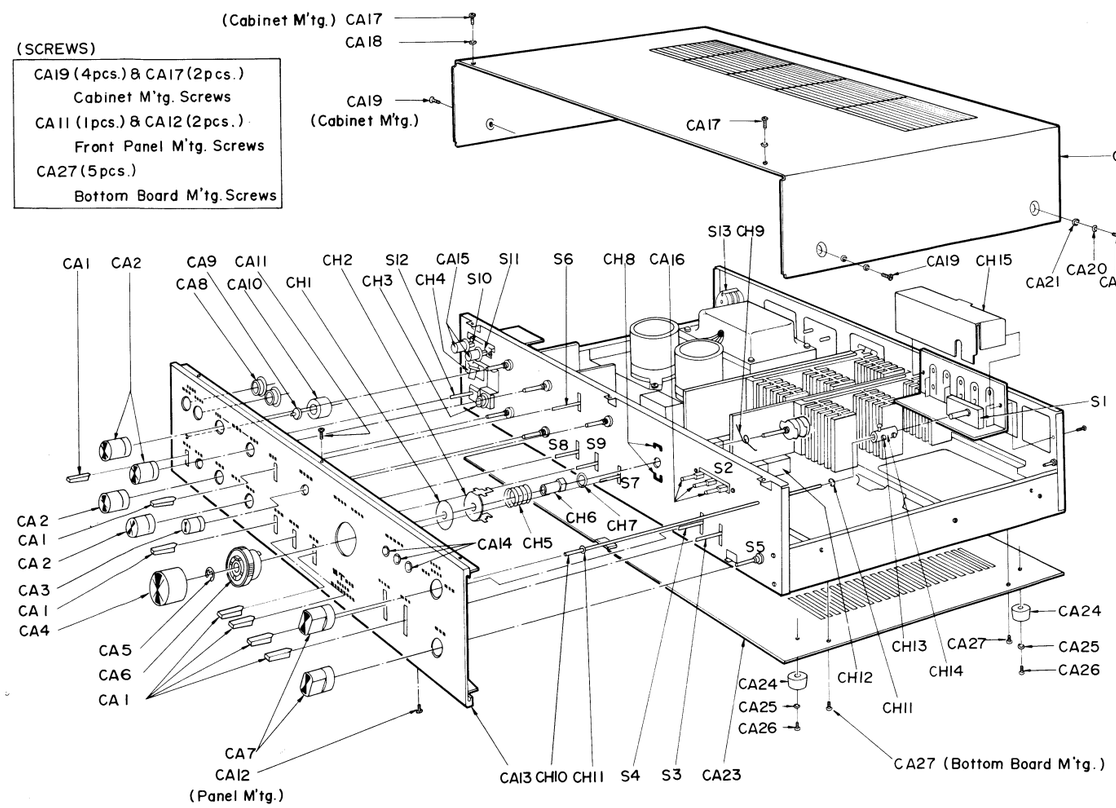
TR501, 506 2SD390A
TR502, 503 2SC1509
TR504, 505 2SA777

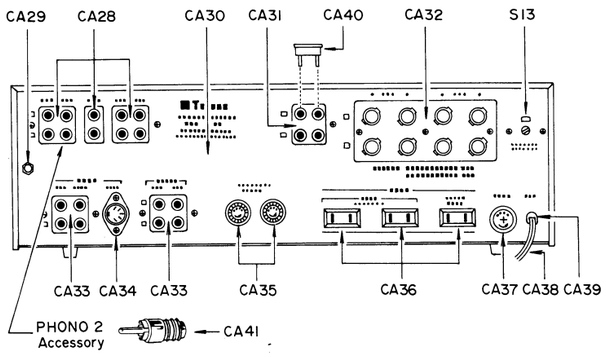
D401, 402 MA150
D503, 504 1001
D505, 506 EQA01-24R
D507 EQA01-06R
D508 EQA01-15R
D509 EQA0108R
D510 EQA01064
D511 1001

■ CABINET & CHASSIS PARTS LOCATION

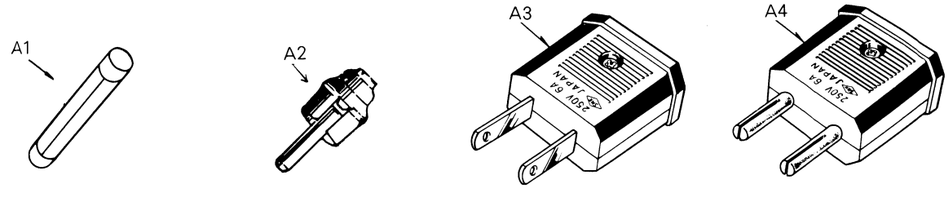
(SCREWS)

CA19 (4pcs.) & CA17 (2pcs.)
Cabinet M'tg. Screws
CA11 (1pcs.) & CA12 (2pcs.)
Front Panel M'tg. Screws
CA27 (5pcs.)
Bottom Board M'tg. Screws





■ ACCESSORIES



■ REPLACEMENT PARTS LIST

NOTES :

1 Part numbers are indicated on most mechanical parts. Please use this part number, for parts orders.

2 **X - Z** rank: **X** rank parts will cover 80% of repair needs.
X + Y rank parts will cover 95% of repair needs.
Z rank parts are less necessary.

Bemerkungen :

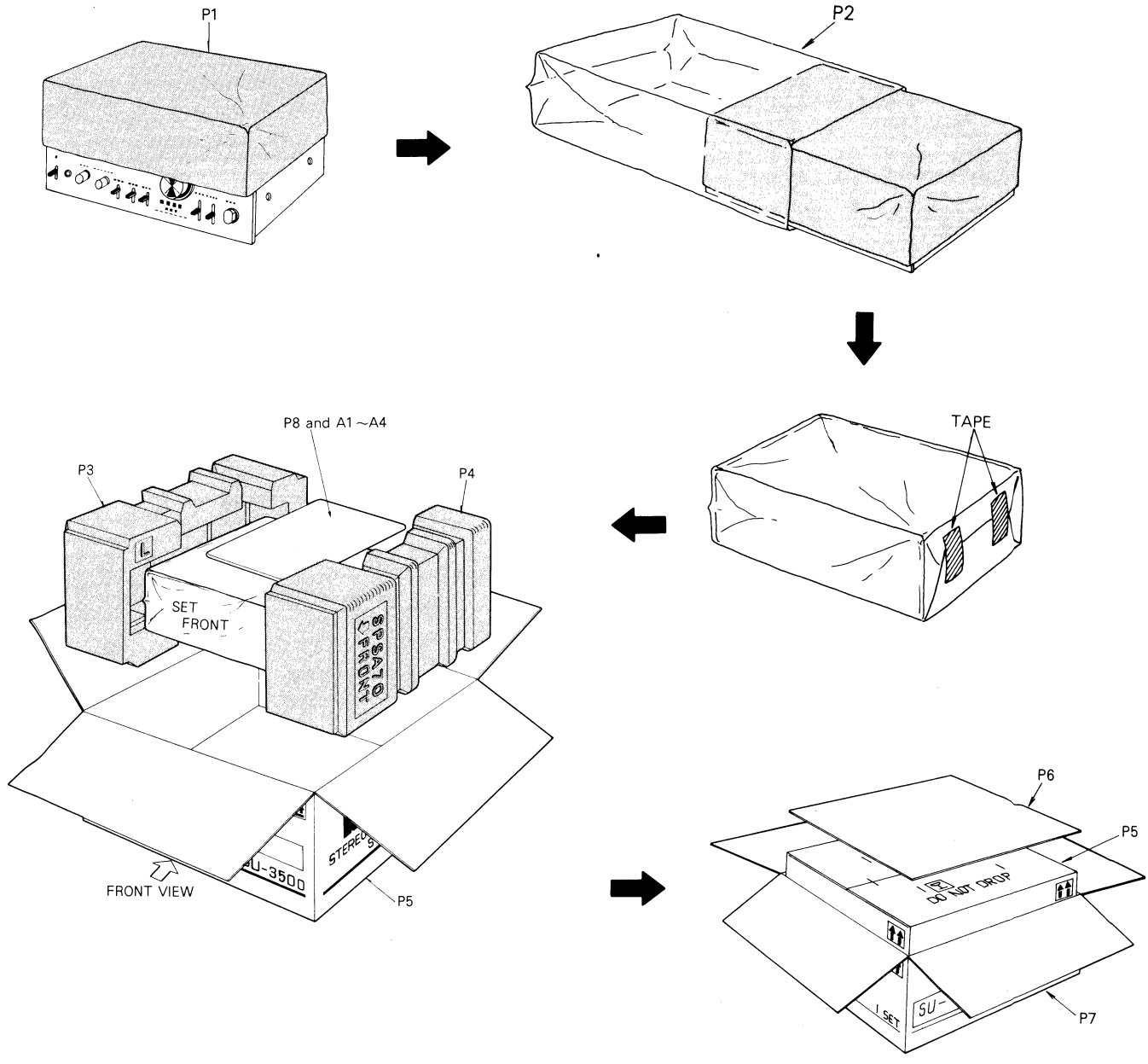
1. Die meisten mechanischen Teile sind mit Teilnummern versehen. Bitte geben Sie diese Nummern an, sofern die Teile keine Bezugsnummern haben.
2. Gruppen **X - Z** : Teile der Gruppe **X** machen 80% des Erstzteilbedarfes aus. Teile der Gruppen **X** und **Y** machen 95% des Ersatzteilbedarfes aus. Teile der Gruppe **Z** werden seltener benötigt.

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
TRANSISTORS				
TR101,102,103, 104,201 (×2), 202(×2),	2SA722T	Equalizer Differential & Tone Differential Amplifier	8	X
TR105,106	2SC1509®Q	Equalizer Amplifier	2	○ X
TR203(×2), 301,302, 403(×2)	2SC1328T	Tone, Filter & Main Pre Driver Amplifier	6	X
TR205(×2)	2SA720R	Tone Control Amplifier	2	X
TR204(×2), 602,603	2SC1318R	Tone Amp. & Speaker Protection Switching	4	X
TR109,110,504, 505	2SA777Q	Equalizer Amp., An Error Voltage Detector & DC Amp.	4	X
TR107,108,502, 503	2SC1509Q	Equalizer Amp., DC Amp. & An Error Voltage Detector	4	X
TR401(×2), 402(×2)	2SA640AD-R	Main Amp. Differential Amplifier	4	X
TR406(×2)	2SC828R	Thermal Compensation	2	X
TR404(×2), 408(×2)	2SA794R	Pre Driver & Driver Amplifier	4	○ X
TR405(×2), 407(×2)	2SC1567R	Pre Driver & Driver Amplifier	4	○ X
TR409(×2)	2SC793Y	Power Amplifier	2	○ X
TR410(×2)	2SA663Y	Power Amplifier	2	○ X
TR501,506	2SD390A-Q	DC Voltage Control	2	○ X
TR601	2SA684Q	Speaker Protection Relay Switching	1	○ X
DIODES				
D52	SVDAS2HB10	Rectifier	1	X
D401(×2), 402(×2)	MA150	Thermal Correction	4	X
D501	SVDAC08P-1	Rectifier, Positive Output	1	X
D502	SVDAC08P-1R	Rectifier, Negative Output	1	X
D503,504,511	RVD10D1	Shock Noise Cancel & Rectifier	3	X
D505,506,510	SVDAEQA0124R	24V Zener, Shock Noise Cancel	3	○ X
D507	SVDAEQA0106R	6V Zener, Voltage Stabilizer	1	○ X
D508	SVDAEQA0115R	15V Zener, Voltage Dropper	1	○ X
D509	SVDAEQA0109R	9V Zener, Voltage Dropper	1	○ X
TRANSFORMER and THERMISTORS				
T1	SLTA5Q24S	Power Transformer	1	○ X
TH401(×2)	RRT251	Thermistor, Driver Circuit	2	Y
RESISTORS				
R153,154	ERD14TJ470	47Ω, 1/4W, ±5%, Carbon	2	Y
R223(×2)	ERD14TJ101	100Ω, 1/4W, ±5%, Carbon	2	Y
R155,210(×2)	ERD14TJ331	330Ω, 1/4W, ±5%, Carbon	3	Y
R212(×2), 213(×2)	ERD14TJ391	390Ω, 1/4W, ±5%, Carbon	4	Y
R137,138, 215(×2), 414(×2)	ERD14TJ471	470Ω, 1/4W, ±5%, Carbon	6	Y
R221(×2)	ERD14TJ561	560Ω, 1/4W, ±5%, Carbon	2	Y
R416(×2)	ERD14TJ681	680Ω, 1/4W, ±5%, Carbon	2	Y
R151,152	ERD14TJ821	820Ω, 1/4W, ±5%, Carbon	2	Y
R313,314, 402(×2)	ERD14TJ102	1kΩ, 1/4W, ±5%, Carbon	4	Y
R123,124	ERD14TJ122	1.2kΩ, 1/4W, ±5%, Carbon	2	Y
R109,110,111, 112,202(×2), 225(×2), 229(×2), 405(×2), 415(×2)	ERD14TJ182	1.8kΩ, 1/4W, ±5%, Carbon	14	Y
R103,104,521, 523	ERD14TJ222	2.2kΩ, 1/4W, ±5%, Carbon	4	Y
R141,142,516	ERD14TJ272	2.7kΩ, 1/4W, ±5%, Carbon	3	Y
R113,114,325, 326,327,328, 424(×2)	ERD14TJ332	3.3kΩ, 1/4W, ±5%, Carbon	8	Y
R119,120 408(×2)	ERD14TJ392	3.9kΩ, 1/4W, ±5%, Carbon	4	Y
R220(×2), 321,322,601	ERD14TJ472	4.7kΩ, 1/4W, ±5%, Carbon	5	Y
R209(×2), 211(×2), 222(×2), 226(×2), 524,525	ERD14TJ682	6.8kΩ, 1/4W, ±5%, Carbon	10	Y
R205(×2), 605,606	ERD14TJ822	8.2kΩ, 1/4W, ±5%, Carbon	4	Y
R135,136, 206(×2),303, 304,406(×2), 407(×2),504, 505,506,507, 508,509,532, 533,608, 609	ERD14TJ103	10kΩ, 1/4W, ±5%, Carbon	20	Y
R305,306	ERD14TJ123	12kΩ, 1/4W, ±5%, Carbon	2	Y
R207(×2), 208(×2), 224(×2), 227(×2),512	ERD14TJ153	15kΩ, 1/4W, ±5%, Carbon	9	Y
R115,116,117, 118,228(×2), 517	ERD14TJ183	18kΩ, 1/4W, ±5%, Carbon	7	Y
R307,308	ERD14TJ223	22kΩ, 1/4W, ±5%, Carbon	2	Y
R604	ERD14TJ273	27kΩ, 1/4W, ±5%, Carbon	1	Y
R183,184,526 527,607	ERD14TJ333	33kΩ, 1/4W, ±5%, Carbon	5	Y
R412(×2),515, 518	ERD14TJ393	39kΩ, 1/4W, ±5%, Carbon	4	Y
R219(×2),603	ERD14TJ563	56kΩ, 1/4W, ±5%, Carbon	3	Y
R181,182, 218(×2),319, 320,403(×2), 530,531	ERD14TJ683	68kΩ, 1/4W, ±5%, Carbon	10	Y
R301,302	ERD14TJ823	82kΩ, 1/4W, ±5%, Carbon	2	Y
R139,140,149, 150,214(×2)	ERD14TJ104	100kΩ, 1/4W, ±5%, Carbon	5	Y
R2,3,309,310	ERD14TJ124	120kΩ, 1/4W, ±5%, Carbon	4	Y
R217(×2)	ERD14TJ154	150kΩ, 1/4W, ±5%, Carbon	2	Y
R1,4	ERD14TJ274	270kΩ, 1/4W, ±5%, Carbon	2	Y
R409(×2)	ERD14TJ824	820kΩ, 1/4W, ±5%, Carbon	2	Y
R145,146,311, 312	ERD14TJ105	1MΩ, 1/4W, ±5%, Carbon	4	Y
R107,108	ERD14TSJ393	39kΩ, 1/4W, ±5%, Carbon	2	Y
R317,318, 404(×2)	ERD14TSJ473	47kΩ, 1/4W, ±5%, Carbon	4	Y
R204(×2)	ERD14TSJ154	150kΩ, 1/4W, ±5%, Carbon	2	Y
R105,106, 401(×2)	ERD14TSJ184	180kΩ, 1/4W, ±5%, Carbon	4	Y
R101,102, 201(×2), 203(×2)	ERD14TSJ224	220kΩ, 1/4W, ±5%, Carbon	5	Y
R315,316	ERD14TSJ334	330kΩ, 1/4W, ±5%, Carbon	2	Y
R418(×2), 419(×2)	ERD14FJ3R3	3.3Ω, 1/4W, ±5%, Carbon	4	Y
R413(×2), 417(×2)	ERD14FJ470	47Ω, 1/4W, ±5%, Carbon	4	Y
R420(×2), 421(×2)	ERD14FJ680	68Ω, 1/4W, ±5%, Carbon	4	Y
R127,128,129, 130	ERD14FJ181	180Ω, 1/4W, ±5%, Carbon	4	Y
R131,132,133, 134	ERD14FJ221	220Ω, 1/4W, ±5%, Carbon	4	Y
R121,122,125, 126	ERD14FJ331	330Ω, 1/4W, ±5%, Carbon	4	Y
R410(×2), 411(×2)	ERD14FJ471	470Ω, 1/4W, ±5%, Carbon	4	Y
R510,511,520, 522	ERD14FJ102	1kΩ, 1/4W, ±5%, Carbon	4	Y
R602	ERD12TJ471	470Ω, 1/2W, ±5%, Carbon	1	Y
R519	ERD12TJ472	4.7kΩ, 1/2W, ±5%, Carbon	1	Y
R501,502,503	ERD18FJ2R2	2.2Ω, 1/8W, ±5%, Carbon	3	Y
R513,514	ERD18FJ100	10Ω, 1/8W, ±5%, Carbon	2	○ Y
R701,702	ERX2ANJ100	10Ω, 2W, ±5%, Metallic	2	○ Y
R422(×2), 423(×2)	ERX3ANJR47	0.47Ω, 3W, ±5%, Metallic	4	○ Y
R703,704	ERG2ANJ471	470Ω, 2W, ±5%, Metallic	2	○ Y

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
VARIABLE RESISTORS				
VR1	EVF54A082252	250kΩ(B). Balance Control	1	○ X
VR2	EVG63A041BF5	250kΩ(B). Volume Control	1	○ X
VR201(×2). 202(×2)	EVC82A082C15	100kΩ(C). Bass & Treble Control	4	○ X
VR401(×2)	EVLS0AA00B54	50kΩ(B). DC Unbalance Adjustment	2	X
VR402(×2)	EVLS0AA00B52	500Ω(B). ICQ Adjustment	2	X
VR501	EVLS3AA00B53	5kΩ(B). Voltage Stabilizer Adjustment	1	X
VR502	EVLS3AA00B23	2kΩ(B). Voltage Stabilizer Adjustment	1	X
CAPACITORS				
C202(×2)	ECCD1H040C	4pF. 50WV. ±0.25pF. Ceramic	2	Z
C209(×2)	ECCD1H180K	18pF. 50WV. ±10%. Ceramic	2	Z
C212(×2)	ECCD1H220K	22pF. 50WV. ±10%. Ceramic	2	Z
C105.106	ECCD1H390K	39pF. 50WV. ±10%. Ceramic	2	Z
C402(×2)	ECCD1H101K	100pF. 50WV. ±10%. Ceramic	2	Z
C403(×2)	ECCD2H100K	10pF. 500WV. ±10%. Ceramic	2	Z
C111.112	ECCD2H150K	15pF. 500WV. ±10%. Ceramic	2	○ Z
C404(×2). 405(×2)	ECCD2H101K	100pF. 500WV. ±10%. Ceramic	4	Z
C408(×2)	ECKD1H821KB	820pF. 50WV. ±10%. Ceramic	2	Z
C125.126.135. 136.210(×2). 301.302	ECKD2H821KB	820pF. 500WV. ±10%. Ceramic	8	Z
C407(×2)	ECKD1H102PF	0.001 μF. 50WV. $^{+100}_{0}$%. Ceramic	2	Z
C12.107.108. 129.130	ECKE1H103PF	0.01 μF. 50WV. $^{+100}_{0}$%. Ceramic	5	Z
C1.2	ECQU2A103MD	0.01 μF. 250VAC. ±20%. Polyester	2	Z
C303.304	ECQM05152KZ	0.0015 μF. 50WV. ±10%. Polyester	2	Z
C119.120	ECQM05272JZ	0.0027 μF. 50WV. ± 5%. Polyester	2	Z
C131.132	ECQM05392JZ	0.0039 μF. 50WV. ± 5%. Polyester	2	Z
C211(×2).526. 527	ECQM05103KZ	0.01 μF. 50WV. ±10%. Polyester	4	Z
C213(×2)	ECQM05223KZ	0.022 μF. 50WV. ±10%. Polyester	2	Z
C307.308	ECQM05333KZ	0.033 μF. 50WV. ±10%. Polyester	2	Z
C305.306	ECQM05473KZ	0.047 μF. 50WV. ±10%. Polyester	2	Z
C531.532	ECQM05104KZ	0.1 μF. 50WV. ±10%. Polyester	2	Z
C214(×2)	ECQM05224KZ	0.22 μF. 50WV. ±10%. Polyester	2	Z
C701.702	ECQM1473M	0.047 μF. 125WV. ± 20%. Polyester	2	Z
C123.124	ECQS1361JZ	360pF. 125WV. ± 5%. Styrol	2	Z
C121.122	ECQS1391JZ	390pF. 125WV. ± 5%. Styrol	2	Z
C11.109.110. 113.114. 203(×2). 406(×2)	ECEA6V33	33 μF. 6.3WV. Electrolytic	9	Y
C207(×2)	ECEA16V47	47 μF. 16WV. Electrolytic	2	Y
C208(×2)	ECEA16N47	47 μF. 16WV. Non Palar Electrolytic	2	○ Y
C401(×2)	ECAG25ER68X	0.68 μF. 25WV. Electrolytic	2	Y
C101.102	ECSZ25EF3R3	3.3 μF. 25WV. Electrolytic	2	Y
C206(×2)	ECEA25V4R7	4.7 μF. 25WV. Electrolytic	2	Y
C133.525	ECEA25V33	33 μF. 25WV. Electrolytic	2	Y
C204(×2).313. 314.315.316. 521.522.523. 524	ECEA25V47	47 μF. 25WV. Electrolytic	10	Y
C528	ECEA25V100	100 μF. 25WV. Electrolytic	1	Y
C601	ECEA25V220V	220 μF. 25WV. Electrolytic	1	○ Y
C205(×2).117. 118.311.312	ECEA50NR47X	0.47 μF. 50WV. Non Palar Electrolytic	6	Y
C201(×2). 309.310	ECEA50VR47G	0.47 μF. 50WV. Electrolytic	4	Y
C115.116.127. 128.509.510. 513.514.515. 516.517.518. 519.520	ECEA50V47	47 μF. 50WV. Electrolytic	14	Y
C529	ECEA50V100	100 μF. 50WV. Electrolytic	1	Y
C530	ECEA50V100V	100 μF. 50WV. Electrolytic	1	○ Y
C511.512	ECEA50V330	330 μF. 50WV. Electrolytic	2	Y
C3.4	ECEM50R103E	10000 μF. 50WV. Electrolytic	2	○ Y
C502.503.508	ECEA63V47L	47 μF. 63WV. Electrolytic	3	○ Y
C501.504.505. 506.507	ECEA63V220L	220 μF. 63WV. Electrolytic	5	○ Y
COMPONENT COMBINATIONS				
M51.52.501. 502	RXAF103P22HD	Hum Canceler. 0.01 μF. 500WV	4	Y
SPEAKERS PROTECTION RELAY				
	SSYA1	Relay. Power Source Circuit	1	X
SWITCHES				
S1	SSRA58	Selector Switch	1	○ X
S2	SSHA43S	Phono Impedance Selector Switch	1	○ X
S3	SSLA22S	Tape Monitor Switch	1	○ X
S4	SSLA21S	Recording Mode Switch	1	○ X
S5	SSRA57	Mode Switch	1	○ X
S6	SSLA24S	Tone Switch	1	○ X
S7.8.9	SSLA23S	Loudness, Low & High Filter Switch	3	○ X
S10.11	SSHA42	Speakers Switch	1	○ X
S12	SSLA20S	Power Source Switch	1	○ X
S13	SSRA7S	Voltage Selector Switch	1	X
FUSES and LIGHTS				
F1	XBAS2A4001	Fuse. 4A Power Source	1	○ X
F2.3	XBAS1A4001	Fuse. 4A Circuit Protection	2	X
F4	XBAS2B2002	Fuse. 2A Power Source	1	○ X
PL	XAM37K150	Pilot Lamp (7.5V 75mA)	1	X
CABINET PARTS				
CA1	SBLA3	Knob. Lever Switches	7	○ X
CA2	SBNA95-2E	Knob. Bass & Treble Controls	4	○ X
CA3	SBNA116	Knob. Balance Control	1	○ X
CA4	SBNA114E	Knob. Volume Control	1	○ X
CA5	XUC8FZ	E-ring. Pre-Set	1	Y
CA6	SBNA115E	Knob. Pre-Set	1	○ X
CA7	SBSA8	Knob. Selector & Mode Switch	2	○ X
CA8	SGXA6004	Bracket. Speaker Switch Button	2	Z
CA9	SGLA9	Panel Light	1	○ Z
CA10	SHRA601	Bracket. Pilot Lamp	1	Z
CA11	XSS3+6KS	Screw. Front Panel M'tg.	1	Z
CA12	XTV3D8CK	Screw. Front Panel M'tg.	2	Z
	→SYWA160A	Front Panel. Complete	1	○ Y
CA13	SGWA1210	Panel } Not Available Order	(1)	
CA14	SGXA57	Bracket } SYWA 160A	(3)	
CA15	SBCA50	Button. Speaker Switches	2	○ Y
CA16	SBCA51	Button. Phono Impedance Switches	3	○ Y
CA17	XSB3+8KS	Screw. Cabinet M'tg.	2	Z
CA18	XWG3K	Washer. Cabinet M'tg. Screw	2	Z
CA19	XSB4+10KS	Screw. Cabinet M'tg.	4	Z
CA20	XWA4BK	Spring Washer. Cabinet M'tg. Screw	4	Z
CA21	XWG4K	Washer. Cabinet M'tg. Screw	4	Z
CA22	SKAA691	Cabinet	1	○ Y
	→SYUA81A	Bottom Board. Complete	1	○ Y
CA23	SKUA351	Bottom Board Only	1	○ Z
CA24	SHGA929	Leg	4	Z
CA25	XWG3F10	Washer. Leg M'tg. Screw	4	Z
CA26	XTN3D12B	Screw. Leg M'tg.	4	Z
CA27	XTB4+8BR	Red Screw. Bottom Board M'tg.	6	Z
CA28	SJFA3015	Terminal. Phono, Tuner & Aux. Input	1	○ Y
	→SYPA252AS	Rear Panel. Complete	1	○ Y
CA29	SNEA404	Nut. Ground Terminal	1	Z
	SNEA204-2S	Volt. Ground Terminal	1	Z
CA30	SGPA363A	Rear Panel Only	1	○ Z
CA31	SJFA3409	Terminal. Pre & Main Amp Connector	1	Y
CA32	SJFA4807	Terminal. Speakers	1	○ Y
CA33	SJFA3407	Terminal. Tape Monitor 1 & 2	2	Y
CA34	RJS31-1	DIN Socket. Tape Monitor	1	Y
CA35	SJFA107	Holder. Circuit Protection Fuses	2	Y
CA36	SJSA66	Sodket. AC Outlet	3	○ Y
CA37	SJFA1	Holder. Power Source Fuses	1	○ Y
CA38	SJAA3	AC Cord/with AC Plug	1	Y
CA39	RHR111	Bushing. AC Cord	1	Z
CA40	SJPA9201	Short Pin. Pre & Main Amplifier	2	X
CA41	SJP9103	Short Pin Plug. Phono 2 Terminal	2	Y
CHASSIS PARTS				
CH1	SNWA951	Slider. Pre-Set	1	Z
CH2	SUWA167-1	Mounting. Pre-Set	1	Z
CH3	SJJA14	Jack. Headphones	1	Y
CH4	SMZA6091	Bracket. Pilot Lamp	1	Z
CH5	SUSA33	Coil Type Spring. Pre-Set	1	Z
CH6	SUHA8	Nut. Volume & Pre-Set	1	Z
CH7	XWV8	Washer. Nut	1	Z
CH8	SHGA943	Rubber Bracket. Pre-Set Mounting	2	Z
CH9	SUSA34-1	Spring. Pre-Set Mounting	1	Z
CH10	SUBA18	Coupling Rod. Selector Switch	1	○ Z
CH11	XUC5FW	E-ring. Coupling Rod	2	Y
CH12	SJSA65	Socket. Main & Tone Amp. Circuit	6	Y
CH13	XXAR3H6S	Screw. Coupler M'tg.	3	Z
CH14	SUBA21S	Coupler. Selector switch & Coupling Rod	1	○ Z
CH15	SMWA21S	Cover. Input Terminal	1	○ Z
ACCESSORIES				
A1	XBAS1A4001	4A Fuse. Circuit Protection	2	Y
A2	RJP5	Pin Plug	4	Y
A3	RJP16AS	AC Plug	1	Y
A4	RJP 7AS	AC Plug	1	Y

Ref. No.	Part No.	Dercription	Per Set (Pcs.)	Remarks
PACKING PARTS				
P1	SPPA16-1	Soft Cover	1	Z
P2	SPP163	Polyethylene Bag	1	Z
P3	SPSA73	Pad, Left Side	1	○ Z
P4	SPSA70	Pad, Right Side	1	○ Z
P5	SPNA230A	Carton Box, Inner	1	○ Z
P6	SPSA30	Pad, Between Inner & Outer Carton Box	1	Z
P7	SPGA440A	Carton Box, Outer	1	○ Z
P8	SQFA191	Printed Matter, Complete	1	○ Y
	SQXA5114	Instructions Book (Order SQFA191)	(1)	

■ PACKINGS



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